ABSTRACT

A high-resolution, per-packet measurement tool for analyzing a computer network that operates by sending a predetermined number of packets from a sender machine to a

5 receiver machine with measurement information inserted into the packet. The system kernel at the sending machine stamps a sequence number and the sender's local time into the data section of each packet. When packets arrive at the receiver machine, they are similarly stamped by the receiving machine's

10 kernel with the receiving machine's local time. The maintained packet information serves as the basis for latency analysis. For example, one set of latencies can be obtained with QoS mechanisms turned on, and another set with QoS mechanisms turned off, whereby the benefits of the QoS

15 mechanisms can be accurately determined. To analyze the latencies, the present invention normalizes each time and each latency into relative latency information. Clock skew and timer jumps may be handled as part of the normalization.